

Collection Division of Biology Medicine

September 10, 1948

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Box _____ TO: Commissioners and Division Heads

Folder 5 FROM: Carroll L. Wilson, General Manager

SUBJECT: Meeting of the Advisory Committee for Biology and Medicine

The eleventh meeting of the Advisory Committee for Biology and Medicine will be held on September 11, 1948 at the Atomic Energy Commission Building, Washington, D. C.

Invitation is cordially extended to attend this meeting.

Agenda - 9:00 a.m.

1. Consideration of the Minutes of the meeting at Argonne National Laboratory, Chicago, Illinois, on June 11-12, 1948.
2. Report on Support of Research
 - A. Contracts approved since June 11-12 meeting
(To Aid Training Program)
 - (1) University of Oregon - Drs. Arnold L. Soderwall and Paul L. Risley - "Localization of Radioactive Isotopes in Reproductive and Germinal Tissues During Periods of Quiescence and Activation" - \$17,300 plus overhead.
 - (2) Oregon State College - Dr. Joseph S. Butts and Staff - "The Mode of Action of 2-4-Di-chloro-phenoxyacetic Acid as Studied with the Use of C-14" - \$11,500 plus overhead.
 - (3) Oregon State College - Drs. V. H. Cheldelin and B. E. Christensen - "A Study of Vitamin-amino Acid and Carbohydrate-amino Acid Relationships using C-14 as a Tracer Substance" - \$12,500.
 - (4) University of Oregon Medical School - Dr. Edward S. West - "The Degradation of Radioactive Cholesterol Fatty Acids and Ketone Bodies in the Animal Body" - \$16,300 plus overhead.
 - (5) University of Colorado - Dr. John R. Lacher - "Study of Relationships between Chemical Structure, Physical Characteristics and Biological Activity in the Intermediate Metabolism of Nucleic Acid Derivatives" - \$25,200 plus overhead.

DEPARTMENT OF ENERGY DECLASSIFICATION REVIEW

SINGLE REVIEW AUTHORIZED BY: Benjamin S. 5/29/94

REVIEWER: SP-10/chemical

NAME: SP-10/chemical

DATE: 5/29/94

DETERMINATION (CIRCLE NUMBER(S))

1. CLASSIFICATION RETAINED

2. CLASSIFICATION CHANGED TO:

3. CONTAINS NO DOE CLASSIFIED INFO

COORDINATE WITH: _____

CLASSIFICATION CANCELLED

CLASSIFIED INFO BRACKETED

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- (6) University of Colorado - Dr. Theodore T. Puck - "Study of the Radiation Chemistry of Bacteriophage Invasion and Reproduction in Host Cells" - \$43,800 plus overhead.
- (7) Baylor University - Dr. Joseph H. Gast - "Chemistry and Metabolism of Some Sulfur Oxides" - \$15,200 plus overhead.
- (8) North Carolina University - Dr. H. D. Bruner - "Measurement of Volume of Flow of Blood in the Kidney and Level of an Unanesthetized Man by Means of Radioisotopic Procedure" - Original grant \$5,000 increased by \$7,150 to \$12,150.

(Contracts other than Training) 1 yr assignment.

- (9) College of Physicians and Surgeons - Dr. David Nachmonsohn - "Effects of Exposure to Radioactive Materials and to X-ray Irradiation on Nerve Tissue" \$9,900 plus overhead.
- (10) University of Texas - Dr. Jack Myers - "Biological Accumulation of Inorganic Materials by Algae" - \$7000 plus overhead.
- (11) University of Wisconsin Medical School - Dr. James A. Miller - "Labeled Azo Dye Research" - \$285 to purchase one millicurie of C-14 as CH₃I. No overhead.
- (12) Arnold Arboretum, Harvard University - Dr. Karl Sax - "Dosage Curves Under Varying Conditions of Time and Intensity of Radiation" - \$1300.
- (13) New York Post Graduate Hospital - Dr. Marion B. Sulzberger - "Skin Changes Produced by Low-Voltage Roentgen Ray Irradiations" - \$4600 plus overhead.
- (14) University of Washington Medical School - Dr. Robert H. Williams - "The Biological Effects of Radioactive Sulphur" - \$13,306 plus overhead.
- (15) Ohio State University - Dr. J. L. Morton - "The Establishment of Physical and Medical Principles in the Use of Artificially Radioactive Cobalt 60 for the Treatment of Cancer" - \$16,000.

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- (16) Western Reserve University - Dr. H. L. Friedell - "Medical and Biological Research on the Toxicological Effects of Thorium and the Comparative Effects of Various Types of Internally Distributed Ionizing Particles - FY 1948 \$120,000 increased to \$140,000.

B. Contracts Declined since June 11-12, 1948 meeting

- (1) University of California - Dr. Roy Overstreet - "Fission Products in Soil."
- (2) Foundation of Applied Research - Dr. John B. Loefer "Survey of Bacterial and Mold Species to Find Agents which have Cancerlytic Action."
- (3) Montefiore Hospital for Chronic Diseases, New York - Dr. Emit J. Baumann - "Specific Filtration of Anions by the Thyroid."
- (4) Howard University - Dr. John B. Johnson - "The Use of Radioactive Iodine in the Treatment of Thyrotoxicosis."
- (5) University of Rochester School of Medicine - Dr. Wm. S. McCann - "Proposed Study of Blood Serum as a Means for Understanding the Mechanism of Blood Coagulation and Application of the Results of Such Studies to the Phenomena of Blood Coagulation Changes Proposed in Irradiation Sickness."
- (6) University of California School of Medicine - Dr. I. L. Chaikoff - "Radiation Effects of I-131 on Thyroid Tissue."
- (7) University of California - Dr. Carl Epling - "The Fate of Mutations in Free Living Populations."
- (8) Bermuda Biological Station for Research, Inc. - "Use of Radioactive Substances in Marine Organisms."
- (9) University of Virginia - Dr. Chalmers L. Gemmill - "The Effects of Beta-radiation on Enzyme Systems."
- (10) University of Delaware - Dr. A. P. Colburn - "Comparison of the Effects of X-rays, Neutrons, and Mustard Compounds on the Growth and Development of the Corn Seedling" and "The Action of Cathode Rays (Beta Rays) of Monochromatic Energies on Living Cells."

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- (11) University of California - Dr. Wm. J. Kerr - "Study of Problems Related to Diseases of Thyroid."
- (12) University of Michigan - Drs. W.H. Beierwaltes, Isadore Lampe and Henry J. Gomberg - "Radioactive Iodine Research."

3. Projects for consideration

- A. Massachusetts Institute of Technology - Dr. Robley D. Evans - "Radiomedicine Research" - \$66,500

Request transmitted through ONR for support of medical sciences program of laboratory of nuclear sciences and engineering at MIT. This program was initially submitted at the April meeting of the Advisory Committee for Biology and Medicine. Because of the confusion with a similar research program, also under direction of Dr. Evans, now being carried out at the Peter Bent Brigham Hospital by Dr. John Gibson, action was postponed. In the interim clarification of the program has been carried out. This request does not overlap or conflict with the radioactive zinc and related studies at the Peter Bent Brigham Hospital. One item of this program, that of Bactericidal Effects of Cathode Rays, was voted support by the Committee in April in the sum of \$15,000. Another portion of the request, that of support for cancer therapy at the MIT was declined by the Committee. There is now before us a request for approximately \$66,500 which is requested to cover the cyclotron preparation, chemical separation and standardization of radioactive isotopes for medical research together with support of Dr. Evans work in biophysics. This is closely related with studies of radioactive sodium being carried on by Dr. Gamble at the Boston Children's Hospital; Iodine 131 by Dr. Earl M. Chapman, Mass. Gen. Hospital, studies of Chronic Radium Poison and Radiation Carginegenous by Radioactive Isotopes in conjunction with Dr. Aub, Mass. Gen. Hospital, and of Utilization of Radioactive Iodine for Thyroid Therapy in Cardiac Disorders by Dr. Herman Blumgart of Beth Israel Hospital. This general field of work under Dr. Evans had been supported by ONR in the past. ONR has no funds for its support at present. Approximately \$200,000 for the physics aspects of this particular program has been requested of the Physical Sciences Division of ONR and probably will be supported by AEC funds available in the field of physics. It is believed that this cooperative enterprise is useful, its pattern is desirable, the work being carried out is of value from the fundamental standpoint and that a portion of the work is of very special interest to the AEC. Dr. Evans' laboratory is one of the few able to

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perform accurate estimation of radon in expired air, which is of distinct interest to us in relation to some aspects of handling uranium ores.

It is recommended that the ONR be advised that the Division of Biology and Medicine, AEC, makes \$66,500 available for the work of Dr. Evans as outlined above.

- B. Western Reserve University - Dr. Harland G. Wood - "Intermediary Metabolism on Carbohydrates by Bacteria" - \$34,695. --

The AEC is supporting this work in the sum of \$25,000 plus overhead at the present time, this being among the group of projects that ONR supported last year and would have had to abandon if we did not undertake this support. This is essentially a request for renewal with an increase of approximately \$3,000. The research is largely concerned with the "Intermediary Metabolism of Carbohydrates by Bacteria", with particular attention to the use of bacterial enzymes as a means of approach. Both C₁₃ and C₁₄ have been used in labeling compounds. Progress has been made in studying pyruvate metabolism. In the immediate future it is planned to discontinue the isotopic experiments and instead to attempt to purify the enzymes concerned in a study of the 2-carbon intermediate. This will include study of the fractions of the bacterial enzymes for fixation of formate, breakdown of pyruvate and phosphorylation. In addition studies will be continued on the role of acetic acid in oxidation. There will be also studies of the tricarboxylic acid cycle. Studies will be made on the effect of propionic acid bacteria on breakdown of polyalcohols. This project has been submitted at the request of this office to the appropriate panel of ONR for reconsideration. Report of the full panel has not been received but those members who have reported are enthusiastic and advised support.

RECOMMENDATION: It is recommended that the ONR be advised that the Division of Biology and Medicine, AEC, makes \$34,695 available for the work of Dr. Wood as outlined above.

- C. Northwestern University - Dr. J. Roscoe Miller - "Proposal for the Establishment of a Radioisotopic Unit for Instruction, Research, and Therapy - \$27,170 (Policy to be decided).

PROJECT; Establishment of a central isotope laboratory and radioisotope unit at NW University Medical School.

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It is of interest that the Medical School is considering a one-hour undergraduate course for one quarter with the department of chemistry providing instruction and emphasizing nuclear chemistry and its use in therapy. There will be post-graduate medical instruction in the theory of radioactive isotope use, of survey instruments and in the metabolism of radioisotopic material. These two courses are proposed but have not yet been developed. One function of the central isotope laboratory will be to store and prepare radioisotopes for therapy in the hospitals and clinics associated in the medical school. These are at Montgomery Ward Clinics (out-patient), Passavant Memorial, Wesley Memorial Hospital, Saint Luke's Hospital, Evanston Hospital and Children's Memorial Hospital. An Isotope Committee has been established in the Medical School. It planned to set aside a suite of four rooms in the Ward Memorial Building; the Center would be under the guidance of Dr. Howard L. Alt, Associate Professor of Medicine; Dr. Earl Barth, Professor of Radiology; Dr. J.A.D. Cooper, Instructor in Chemistry; Dr. C. J. Farmer, Professor of Chemistry; Dr. Smith Freeman, Professor of Experimental Medicine; George V. LeRoy, Asst. Professor of Medicine and Dr. R. S. Snider, Associate Professor of Anatomy. The request is primarily for counting instruments, survey meters, ionization chambers, remote control apparatus and laboratory functions. A total of \$27,120 including overhead is requested.

RECOMMENDATION: It is recommended that the ONR be advised that the Division of Biology and Medicine, AEC, makes \$27,120 available for the work of Dr. J. Roscoe Miller as outlined above.

4. Civil Defense Planning

A. Progress Report: A panel headed by Captain George M. Lyon has been active in the Office of Civil Defense Planning on their problems related to atomic energy. The office of Civil Defense has been in frequent touch with the Divisions of Biology and Medicine, Engineering, Public Information and others and a series of recommendations as to organization, a summary of the various problems apt to be encountered, and means for meeting them have been prepared. This report has not been finally acted upon by the Secretary of Defense. In its present tentative form it is on file in the office of the Division.

A memorandum has been prepared for Mr. Hopley by Dr. Lyon regarding public information, a copy of which is in the folder. It is believed that the AEC is fulfilling its current responsibilities in the provision

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of necessary technical information, However, it is quite possible that this Division should take a more active part in the formulation of policies with regard to civilian defense and other aspects of possible atomic catastrophe. The advice of the Committee is requested in this regard. See Item 4 in your folders.

5. Fellowships

Status of training centers (Dr. Bowers)

Security status of fellows

6. Draft deferment for fellows and for AEC personnel---

7. U.C.L.A. building (Dr. McLean)

8. Los Alamos Medical Program (Dr. McLean)

9. Discussion of Program in Biology and Agriculture (Dr. Jensen)

Lunch

Executive Session

3 10. AEC staff reorganization

4 11. RW report

5 12. Budget

13. Letter from Dr. Robert Stone

End of Executive Session

14. Atomic Casualty Commission (Dr. Owen)

A. Letter from Dr. Rivers

15. Isotope Farming: Progress and type of compounds desired.

16. Progress in control of beryllium hazard.

17. Other business.

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